Governor's Office of
Economic Development
Centers of Excellence

Funding Recipients for the 2007-08 Centers of Excellence Program

Funding Recipients which are Licensees (Companies) of Center Supported, University Developed Technologies

Licensee / Center (University)	Years Funded to Date	Award Amount

Dynamic Screening Solutions (Formerly Universal Application System) (USU)
NEW **$150,000**

Commercialization of a web-based system that processes applications for multiple agencies in the government services industry. This technology is at the basis of "UtahClicks" and is also in production in Oregon and Indiana. Plans to adapt this software for other industries are underway.

Flying Sensors (Licensee of Miniature Unmanned Air Vehicles) (BYU)
1 **$125,000**

Developing commercial (non-military) applications for miniature unmanned air vehicles (UAVs) including Real Estate, Insurance Industry, EPA - Multi-Source Air Quality Sampling, Random Testing, Pipeline/Remote Facility Surveillance and Emergency Response/Fire Monitoring – Forest & Commercial.

Glycosan BioSystems, Inc. (Licensee of Therapeutic Biomaterials) (U/U)
1 **$75,000**

Commercializing the compounds from Therapeutic Biomaterials for 3-D Cell Culture, Tissue Engineering, Drug Toxicity Testing, & Skin Care.

Larada Sciences (Licensee of Alternate Strategies of Parasite Removal) (U/U)
NEW **$170,000**

Preparing to commercialize a safe, nontoxic and rapid treatment for Pediculosis (head lice), a multibillion-dollar, increasingly resistant problem afflicting some 25% of children by the time they're teenagers.

Philotek (Licensee of Microarray Technology) (U/U) **NEW** **$100,000**

Developing a superior microarray platform for the molecular diagnostics and research markets with improved sensitivity, specificity and throughput.

Licensee / Center (University)	Years Funded to Date	Award Amount

Navigen, Inc. (Licensee of Center For Vascular Biotherapeutics) (U/U)
NEW **$190,000**

Proof of concept in animal models of stabilizing vasculature in macular degeneration and acute lung injury based on a new signaling pathway that regulates the balance between vascular regeneration and stabilization.

Nano-Oxides (Licensee of Nanosize Inorganic Material Powders By Molecular Decomposition) (UU) **NEW** **$150,000**

Commercializing a novel, cost-effective process (molecular decomposition) for the manufacturing of nanosize powders, the building blocks for myriad nanotechnology applications, as well as nanostructured ceramic membranes and other devices.

State of RT (Licensee of Interactive Ray-Tracing & Photo-Realistic Visualization) (U/U)
NEW **$175,000**

Commercializing a software module to deliver real time ray tracing to existing graphics modeling tools and to deliver next generation game development tools based on ray tracing to the market.

VisualShare (Licensee of Center of Excellence for Electronic Medical Education (CEME) (U/U) **NEW** **$150,000**

Commercializing multi-user real-time image conferencing using the Software as a Service (SaaS) Model. This technology provides the remote convergence of images & text for distributed user populations and permits knowledge capture for legal and compliance purposes. First application is for child abuse situations in rural/remote areas to involve specialists in diagnosis of consequences.

University Centers of Excellence

Center (University)	Years Funded to Date	Award Amount

Center for Cellular Therapy and Regenerative Medicine (UU)
NEW **$100,000**

Capabilities to build a "bank" for stem cells derived from umbilical cord blood (so-called "cord blood") which can be used for many clinical applications in regenerative medicine and tissue engineering. Providing GMP and regulatory support for processing, development and commercialization of cord-derived stem cells, biologics and combinational products.

Center for Clean Coke Technology (CEU) **NEW** **$125,000**

This team, led by the College of Eastern Utah's Western Energy Training Center, aims to commercialize research to create Clean Coke from coke fines and waste products and to develop process control expertise by developing a pilot scale facility. This Center also intends to use the pilot plant and related expertise to enhance the training and expertise of employees throughout the area served by CEU.

Center for Control of Flows in Manufacturing (USU)
1 **$ 175,182**

Applying Computational Fluid Dynamics to improve manufacturing processes including particle sorting and Electrical Discharge Machining (EDM). This Center was assigned a business team in 2005-06.

Functionally Graded and Designed Cemented Tungsten Carbide and Polycrystalline Diamond Composite Materials (U/U) **1** **$125,000**

Developing advanced composite materials with predictable wear and failure characteristics designed for demanding applications such as mining, drilling, and grinding.

Center for High End Pharmaceutical and Biomedical Process Optimization (SUU)
NEW **$ 59,760**

Southern Utah University has established a high performance supercomputing facility to enable high fidelity computer modeling of topics of importance to regional industry. The goal of this Center is to partner with a regional pharmaceutical business to develop a 3-dimensional model of a fluidized bed reactor to help optimize their multiphase production processes using computational fluid dynamics. Obviously of interest is to determine if such modeling could be expanded from a single partner to broader applications.

Center (University)	Years Funded to Date	Award Amount

Center for Hybrid & Adaptive Multimedia Processors (CHAMP) (USU) NEW **$50,000**
Commercializing tools and software systems to accelerate time to market of new features for multimedia consumer devices.

Center for Microarray Technology (U/U) **2** **$50,000**
Companion Licensee Philotek also Funded
Developing a superior microarray platform for the molecular diagnostics and research markets with improved sensitivity, specificity and throughput.

Center for Miniature Unmanned Air Vehicles (BYU) **3** **$75,000**
Companion Licensee Flying Sensors also Funded
Rapid design of airframes and miniaturized autopilot and guidance systems for tiny UAVs that can be operated by novices have earned the attention of both military and civilian agencies. An autopilot design has been licensed to Procerus, Inc. in Utah.

Center for Nanopore Sensor Technologies (UU) **NEW** **$125,000**
A nanopore sensor relies on molecule and particle transport through a single conical-shaped pore that is synthesized in glass. The glass surfaces of the pore interior and exterior can be modified by numerous chemical methods to impart molecular selectivity and high sensitivity in designing sensors for different applications. These tiny sensors can detect extremely small numbers of molecules of specific compounds which is extremely useful in such applications as DNA sequencing, drug screening, nanoparticle counting and sizing.

Center for Therapeutic Biomaterials (U/U) **4** **$70,000**
Developing applications of biopolymers and hydrogels for clinical use in wound repair, prevention of surgical adhesions, and extending the life of donated organs. Three companies, 1 in California (Carbylan) and 2 in Utah (Sentrx Animal Care and Glycosan Biosciences) have been spun out of the Center to date.

Center for Thermal Management Technologies (USU) **NEW** **$154,376**
Technologies for extremely high performance thermal management in the context of physical and vibration isolation, in collaboration with Utah State University's Space Dynamics Lab.

Business Team Centers (Assigned a Business Team Only) for 2007-08

A Business Team is an investment of approximately $25k each unless otherwise noted

Biomolecular Nanophotonics (U/U)
Develops chemically engineered micro/nanosystems to dramatically improve the performance of Nucleic Acid Amplification and Detection, one of the key processes used in genetic engineering. The team expects that these improvements can radically improve diagnosis of gene disorders and development of gene therapies, including ribonucleic acid interference (RNAi).

Center for Management of Provenance & Exploratory Workflows (U/U)
($50k Business Team)
VisTrails is a new "workflow management system" that provides support for data exploration and visualization for tasks that have very little repetition. Some example tasks that are suitable for this new system include: calibrating simulations for hedge funds, for locating oil wells and radiation treatment planning.

MIMO Communication System (U/U)
New algorithms for signal detection and reception that significantly improve the performance and throughput of MIMO (Multiple-Input Multiple-Output) wireless communication systems. The developed algorithms offer low complexity and near optimal performance, and are adaptable to any standard.

Center for Nanomedicine Applications in Cancer (U/U)
The Center has designed and developed novel biomaterials with precisely defined molecular architecture for targeted delivery of image probes and therapeutics. These novel nanomaterials based imaging agents and therapeutics have many advantages as compared to other available drug delivery technologies because of their well-defined structure.

Center for The Production of Nanometer Sized Metals, Alloys, Metal Oxides & Mixed-Metal Oxide Powders (BYU)
A unique solid-state method of synthesizing metal oxide and metal nanoparticles has been discovered which is simple, requires comparatively little energy and is easily scalable for production. It produces products up to 99.9999% pure, as small as 1 nm, with size distributions of typically ±10% and can be used for particle or coating production.
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Center for Resveratrol Technology (BYU)
Resveratrol is a compound that occurs in red wine, leading to the "French Paradox" where moderate alcohol consumption has been consistently associated with 20-30% reductions in coronary heart disease. The compound is well-absorbed in humans when taken orally, but it is not very stable. The Center proposes to commercialize stable analogs of resveratrol in order to commercialize novel applications such as topical (skin and hair), nutritional supplements and pharmaceutical products.

Center for Water Treatment Technology (U/U) (formerly Tero Technologies)
Developing robust, low cost ways to remove common pollutants such as nitrates from lagoon wastewater treatment systems. The core prototype product, the "poo-gloo" is simple to build, easy to install and maintain and very effective. This may dramatically enhance the effectiveness of lagoon systems around the world.

Web IDEA*SIS (USU)
The web-based solution will assist educators in tracking, serving, organizing, and evaluating children with disabilities while being compliant with state and federal regulations. The system will include: WYSIWYG web pages; content wizards; legal compliance review tools; customized organizational, procedural, and student progress reports; tools for tracking and allocating resources; communication tools for parents and educators; and tools for technical and content support.

Graduating Centers June 30, 2007 (Completed)

Advanced Imaging LADAR (USU) **4**
Commercializing land-based and airborne high-resolution, laser-based 3D color-imaging platforms for both military and civilian use. One license to RappidMapper, Inc. (now Intelisum), a Utah company.

Homogeneous DNA Analysis (U/U) **4**
Developing a simple and inexpensive method for genotyping DNA samples from patients or disease organisms right in a doctor's office. One application licensed to Idaho Technologies, Inc. (a Utah company).

Titanium Boride Surface Hardening (U/U) **4**
Commercializing harder, longer-lived components and devices – ranging from armor to bearings and orthopedic implants - for the military, biomedical and industrial markets.